

Pollinator Identification

PSC 2025

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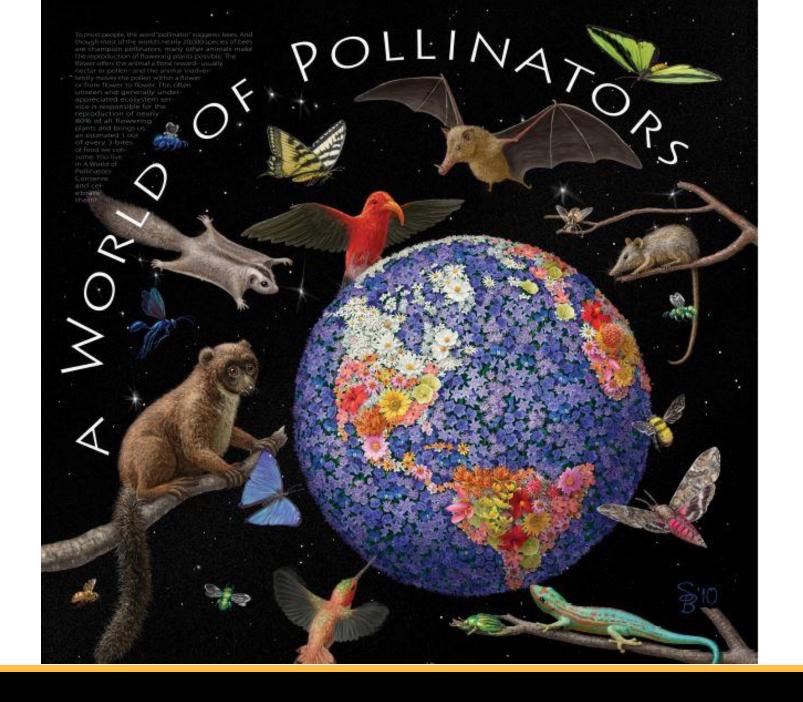
Pollinator ID and Monitoring (~40min)

- Distinguishing major groups

 Bee families
- Bee groups for monitoring
- Bee ID resources









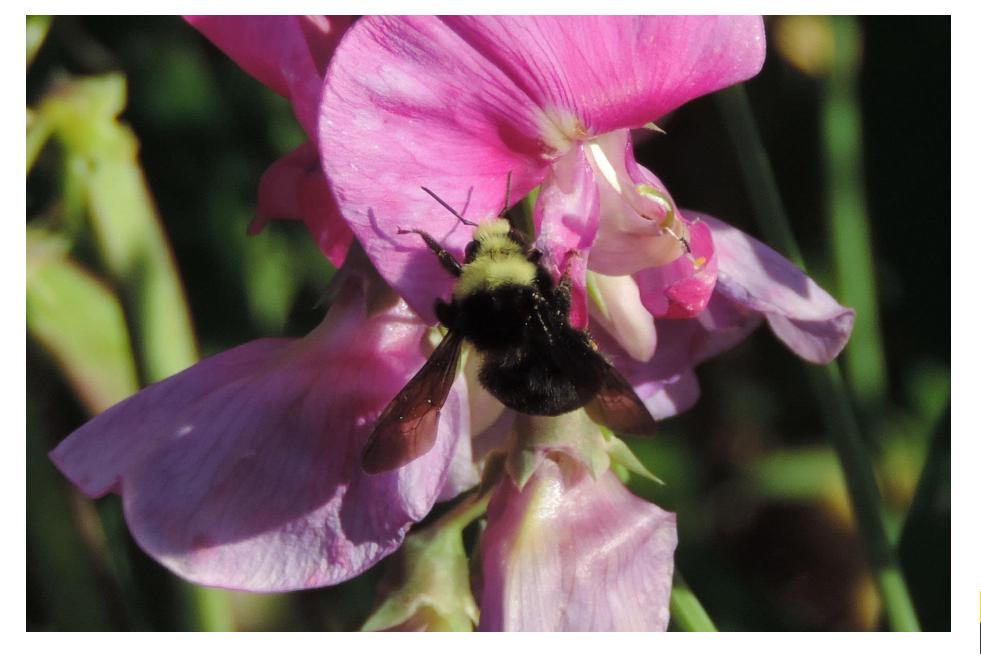






A Bee or Not a Bee That's easy!





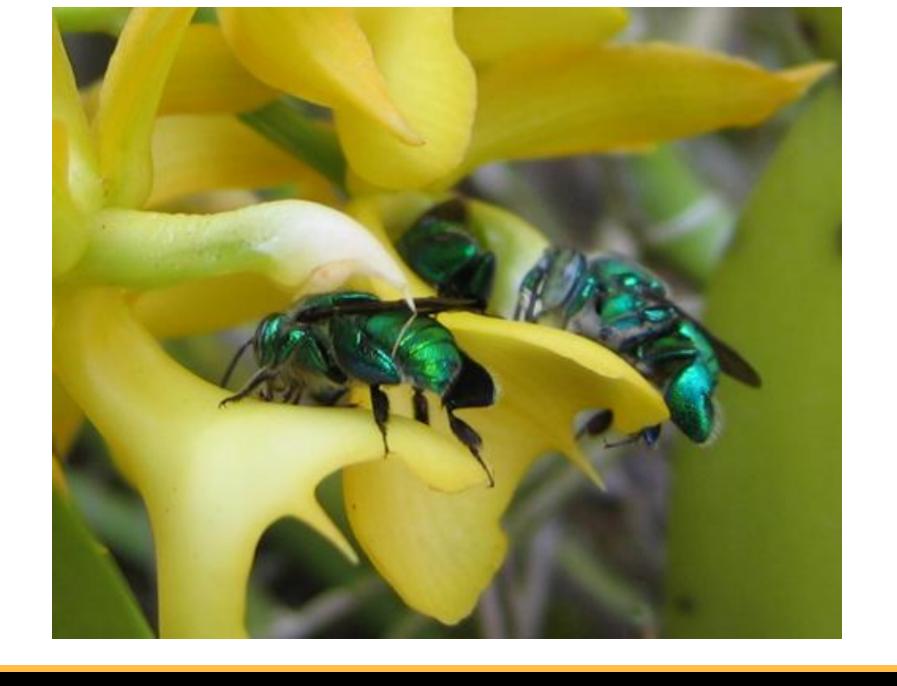






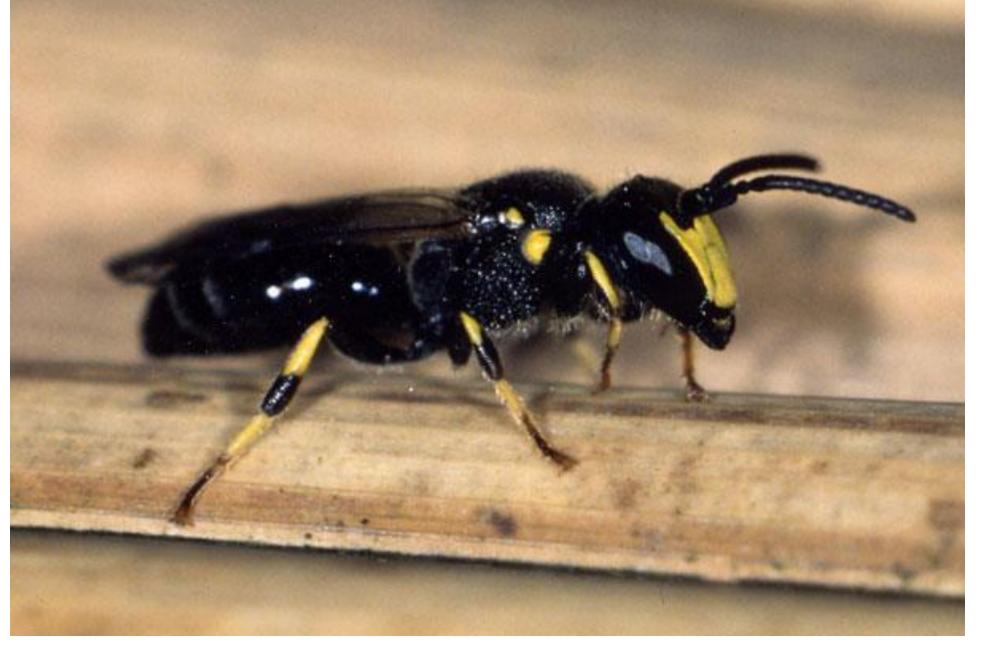


POLLINATOR PARTNERSHIP











POLLINATOR PARTNERSHIP





POLLINATOR PARTNERSHIP

Why are there WannaBees?

Batesian mimicry



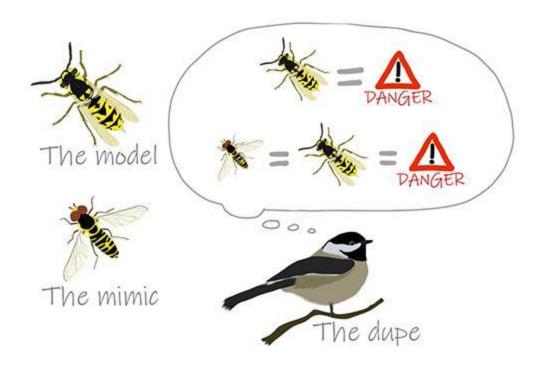
Batesian mimicry

- A harmless species that evolved to imitate the warning signals of a harmful species
- Named after the naturalist Henry Walter Bates worked on butterflies in Brazil



Anthony Westkamper https://m.northcoastjournal.com/NewsBlog/archives/2015/04/05/humbug-mimics

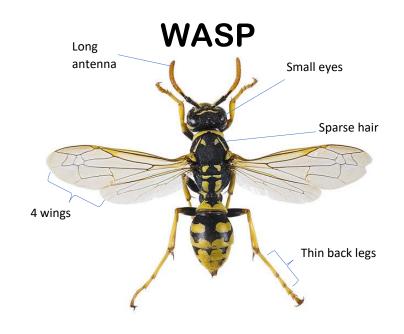


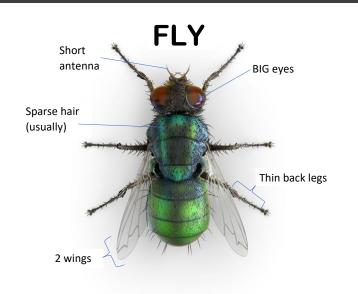


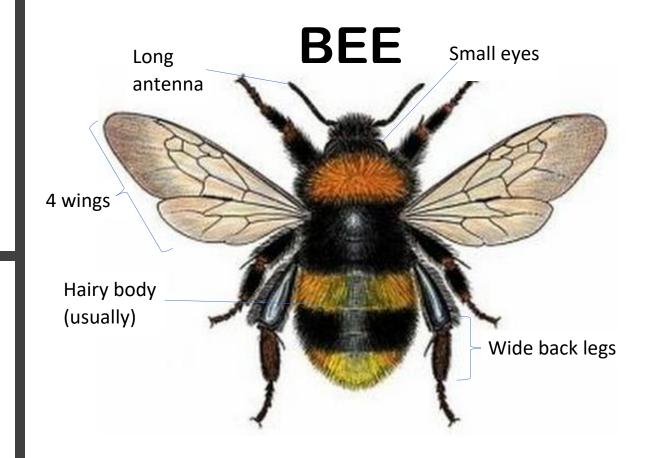
https://m.espacepour lavie. ca/blogue/en/a-sheep-wolf-s-clothing-bate sian-mimicry-insects







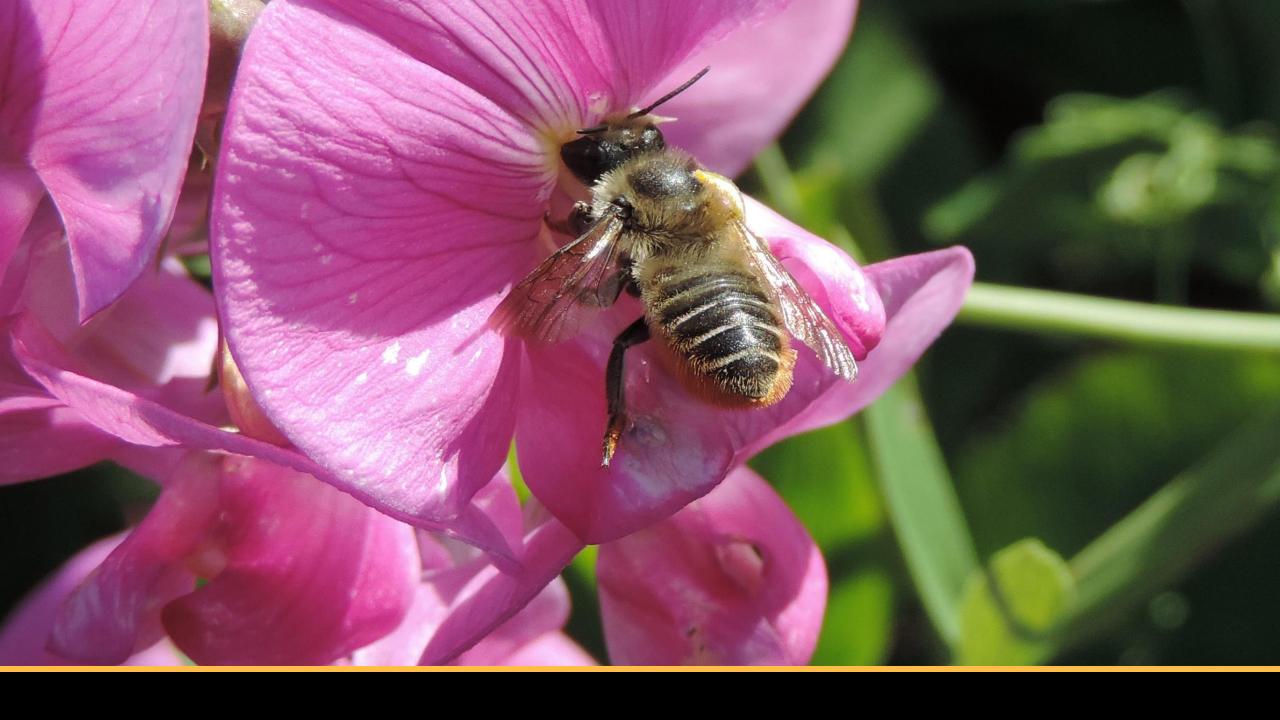


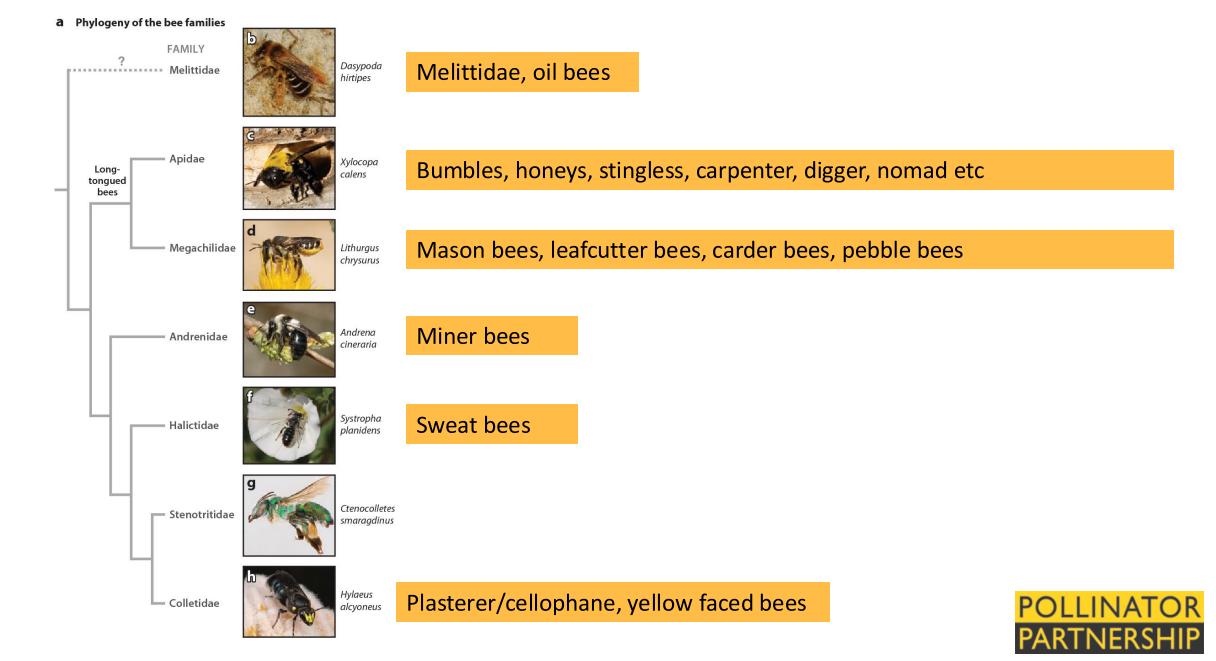


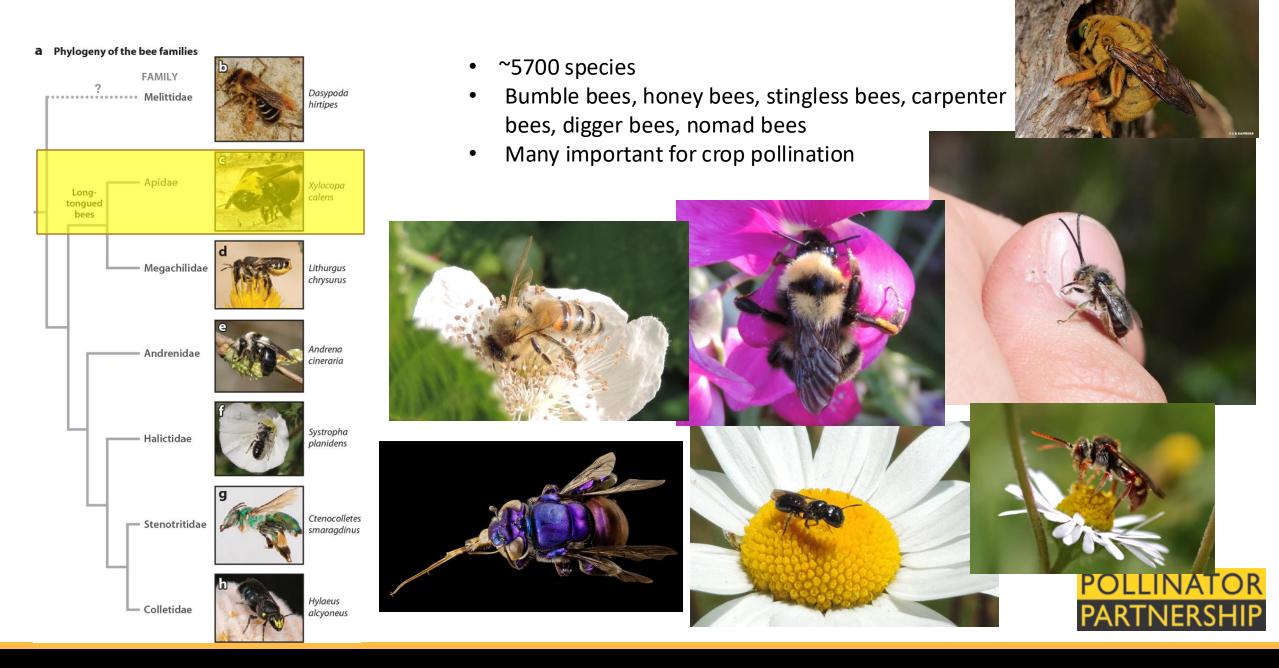


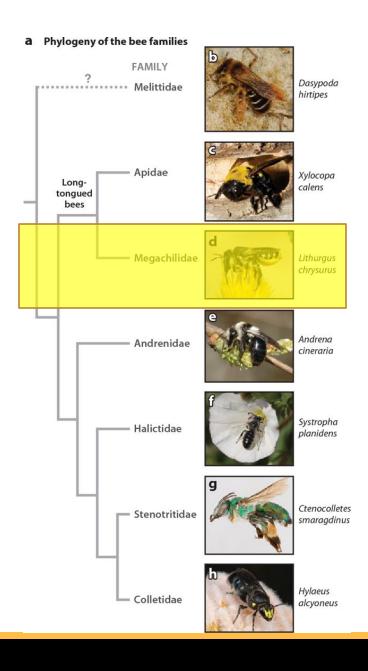








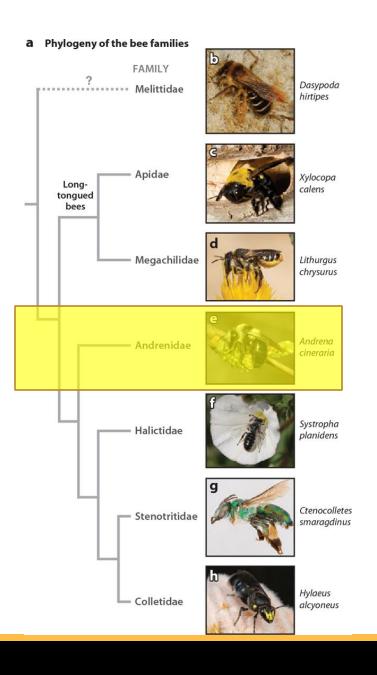




- ~4000 species identified
- Orchard mason bees, leaf cutter bees, wool-carder bees
- Most above ground nesters, all solitary

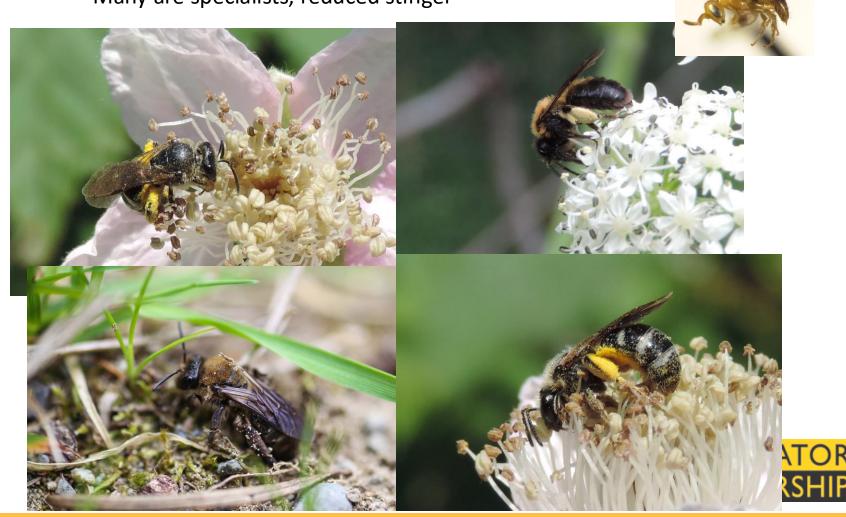


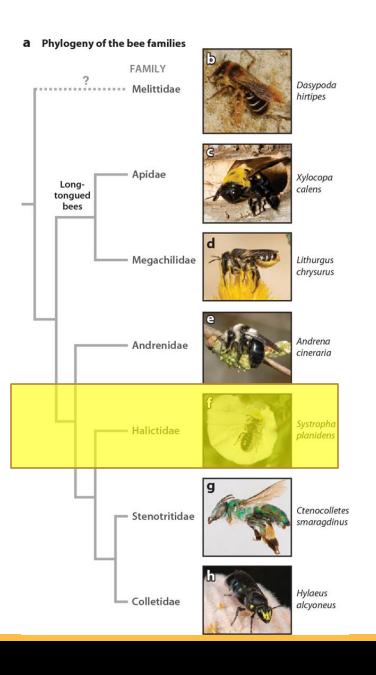




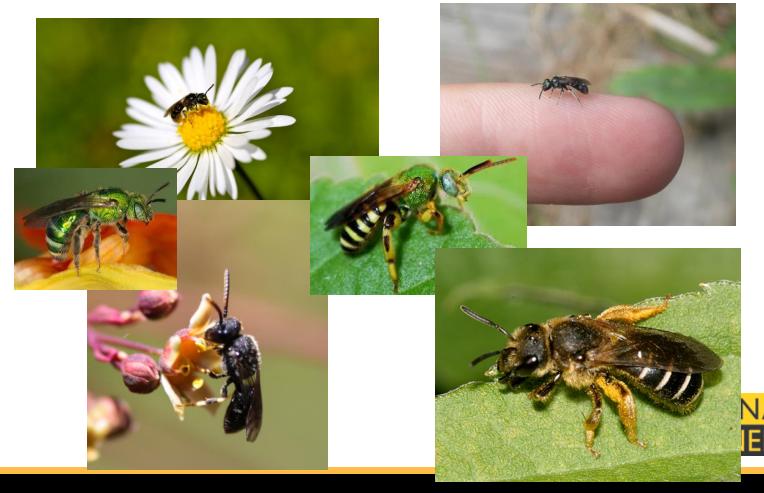
- ~3000 species identified
- Mining bees: dig nests in ground

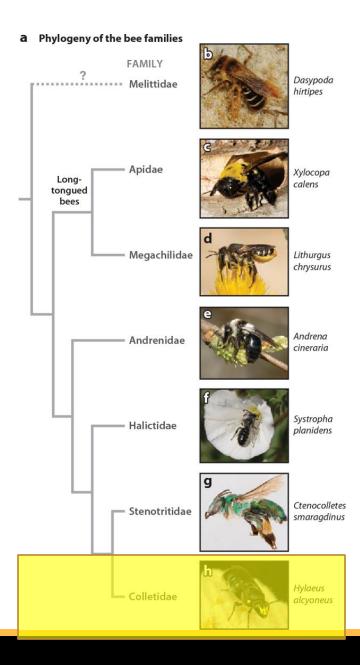
Many are specialists, reduced stinger





- ~4,500 species identified
- 'Sweat bees'
- Many solitary, mostly ground nesting, some social





- ~2000 species identified
- Plasterer/Polyester bees
- Various nesting locations ground/above ground







Bee

Nonnative

Native Bee

- 1. Honey bee
- 2. Bumble Bee
- 3. Hairy Leg Bee
- 4. Hairy Belly Bee
- 5. Other Bee





1. Honey bees











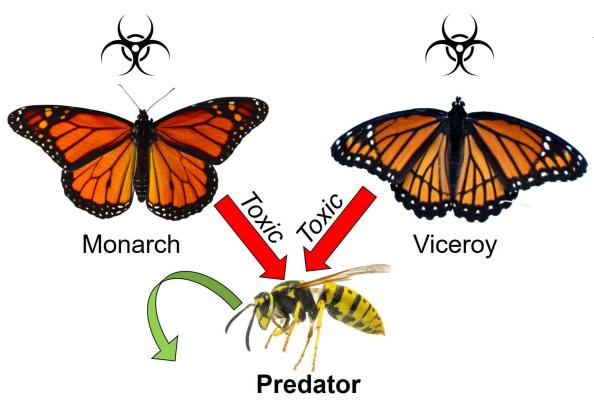


2. Bumble Bees



Müllerian mimicry

- Both are toxic/unpalatable and have evolved to look like each other
- boost the potential for the signal to be learnt by predators
- Co-evolutionary relationship between the two species

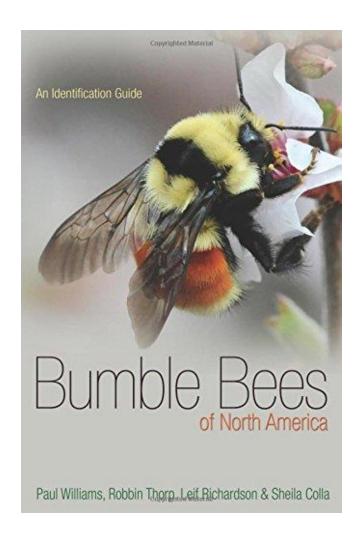


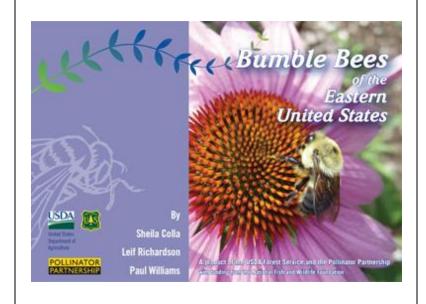
https://theg-cat.com/tag/mullerian-mimicry/

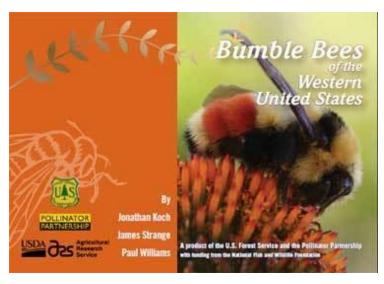




Photo: Joseph Wilson/USU https://www.nature.com/articles/s41598-022-22402-x#Abs1







https://www.pollinator.org/shop/books











3. Hairy Leg Bees (Sweat bees, carpenter bees, miner bees, etc)









4. Hairy Belly Bees (mainly mason bees and leafcutter bees)









5. Other Bees (Yellow face, parasitic)



Bee

Nonnative

Native Bee

1. Honey bee

2. Bumble Bee

3. Hairy Leg Bee

4. Hairy Belly Bee 5. Other Bee











Bee ID Resources

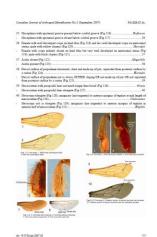
technical

More technical

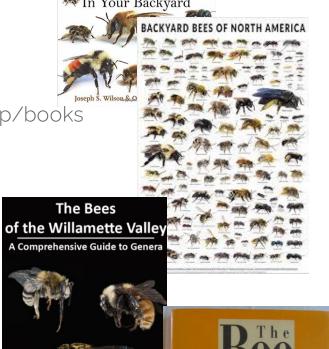
Pollinator Partnership Bee ID sheet

- Bees in Your Backyard
- iNaturalist
- Pollinator Partnership-- bumble bee guides: https://www.pollinator.org/shop/books
- Bumble Bees of North America
- The Bees of the Willamette Valley (online pdf)
- Discover life (https://www.discoverlife.org/mp/20q?guide=Bee_genera)
- CANPOLIN Bee Course Key to Bee Genera in Canada
- The Bee Genera of Eastern Canada, Packer et. Al.
- The Bee Genera of North and Central America (book)



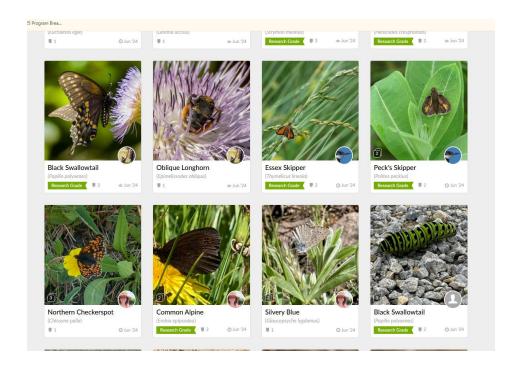






Naturalist









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